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The excess of carbide, when water is added after cooling, will loosen the solid mass in the bottom of the flask so that the flask can be easily cleaned.

800cc. out of a liter has been recovered as absolute alcohol. This will mix with the usual xylol without milkiess. It has a rather offensive odor of acetylene, but is far cheaper than the absolute alcohol from supply houses and quicker than making absolute from lime.

S. R. WILLIAMS, Oxford, Ohio.

#### A CONVENIENT REAGENT CASE

A sectional bookcase has been found most useful for keeping the reagents and appliances used in microscopy free from dust. The case stands at the side of my work table in a corner. The third (13 in.) section from the floor, at the level of the table, is the one which holds the dehydration series and staining jars. In the sections above and below this are slide boxes, metric apparatus, drawing materials and a dissecting microscope.

The short distance needed by the doors for swinging allows me to sit at the work table and reach into most of the sections.

There is also less danger of upsetting jars when they are not on the table in front of you.

The reagent shelf of the bookcase should have all varnish removed as alcohol running down the sides of the bottles softens the varnish and causes the bottles to stick.

S. R. WILLIAMS.

#### CULTURES OF SAPROLEGNIA

A very satisfactory method of cultivating and handling the various species of *Saprolegnia*, *Achlya*, and other of the water-molds, particularly suitable for allowing individual study in large classes, is as follows:

1. Secure bottom-ooze from a number of ponds or lakes, etc., if no infested materials are at hand. Place in these cultures a few flies, that have been immersed in alcohol for disinfection and then thoroly rinsed in water.

2. When any of these begin to show signs of the saprophytes, as a whitish halo, remove the flies to watch glasses half full of water for observation, one fly to each vessel.

3. As zoospores are developed, place recently killed mosquitos, as many as you want preparations, in a watch glass with the infected fly, until they become infected. This requires only a few moments.

4. Place each mosquito in a hanging-drop culture, or other slide culture, in a moist chamber, for individual use.

There is just about enough nutrition in the mosquito to bring the *Saprolegnia* through the life-cycle, and not enough to give trouble with bacteria or infusoria. Since the slides can be transferred to the microscope at any time, without disturbing the culture, the life history of the fungus can be easily followed by even an elementary class. It offers a good laboratory exercise for noting the effects on life and development of changing conditions of temperature and the like.

#### CULTIVATION OF FRESH-WATER ALGÆ

Professor J. A. Nieuwland of Notre Dame University, has done a valuable service for teachers, and other workers with fresh-water algæ, by bringing together in the *Midland Naturalist* a series of suggestions relative to the conditions of successful culture and manipulation of these plants. Among them are the following:

1. Best use small aquaria (one to two gallons) for most algæ. Larger aquaria encourage the growth of *Cladophora*, and entomotraca, worms, insects, etc., which are not helpful to the small algæ.

2. Do not put much material in the jars. Often a very small amount (1 cu. in. to the gallon of water) is best.

3. Remove crustacea and insects. *Utricularia* placed in the jars will aid in this removal of the smaller crustacea.

4. In transplanting, retain as nearly as possible the conditions under which the plants were growing in nature. Use, so far as possible, the very water in which they are found growing. Never allow complete change of water. If necessary to add water, use only a small percent of the total; and if necessary to take it from tap, allow it to run 5 or 10 minutes before letting it pass into the jar. If water is too hard, *Chara* will help to correct it.

5. Cover the bottom of the jars with an inch of well-washed sand. This, as well as the vessels, should be thoroly disinfected with formaldehyde if they have had *Oscillatoria* growing upon